

REMARKS

The Office Action dated April 21, 2006 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-15 are pending and are submitted for consideration.

As a preliminary matter, Applicant appreciates the Office's consideration of Applicant's Pre Appeal Brief Request for Review, the decision to re-open prosecution, and the issuance of a non-final Office Action.

In the Office Action, claims 1, 2, 4-9 and 11-15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Spinney* (US Patent No. 5,414,704) in view of *Douceur* (US Patent No. 6,067,547). The Office Action took the position that *Spinney* teaches each and every element recited in claims 1, 2, 4-9 and 11-15, except for the indexing step recited in Applicant's independent claims. However, the Office Action cites to *Douceur* as teaching the indexing feature, and as such, the Office Action concluded that it would have been obvious to one of ordinary skill in the art to have combined the teaching of the references to generate Applicant's claimed invention. Applicant traverses the rejection and respectfully submits that the cited combination of references, when taken alone or in combination, fails to teach, show, or suggest each and every limitation recited in claims 1, 2, 4-9 and 11-15.

Applicant's independent claim 1 recites a method of performing a table look-up in a network device. The method of the invention includes receiving a data packet through an input port of the network device, parsing the data packet into an index portion and a

corresponding bucket portion, indexing, directly, the index portion to the corresponding bucket portion, and processing address table information stored in an address look-up table using the bucket portion.

Applicant's independent claim 8 recites an address table look-up indexing device. The address lookup device includes a receiver portion of a port of a network device that receives an incoming data packet, a data parser that parses the data packet into an index portion and a corresponding bucket portion, an indexer that directly indexes the index portion to said bucket portion, an address lookup device that accesses an address look-up table using the corresponding bucket portion.

Applicant's independent claim 15 recites a network switch that includes multiple ports used for receiving and exporting data, each of the multiple ports being connected to one another through a communications medium. The network switch further comprises multiple Address Resolution Logic (ARL) devices, each of the multiple ARL devices being connected to one of the multiple ports, each of the multiple ports having a corresponding ARL device. Each of the multiple ARL devices includes a parser that parses data into an index portion and a corresponding bucket portion, an indexer that directly indexes the index portion to a corresponding bucket portion, and a look-up device that accesses table entries in a look-up table using said bucket portion.

As will be discussed below, Applicant submits that *Spinney* and *Douceur* fail to teach, show, or otherwise suggest each of the elements recited in claims 1, 2, 4-9, and 11-15. Specifically, *Spinney* teaches address lookup in packet data communications link,

using hashing and content-addressable memory. The process of *Spinney* is directed to performing source and destination address lookups, where the lookup operations use a combination of programmable hash algorithms, binary search algorithms, and small content-addressable memories (CAM). *Douceur* teaches a method for hash table expansion and contraction for use with internal searching, wherein the hash tables are used to index into an internal database. The hash tables are segmented into a sequence of segments that increase geometrically in size, with the most recent segment added to the table being a base segment. To expand a hash table, an expansion segment (twice as large as the previous segment) is added to the base segment. As records are added to the hash table, entries from the base segments are gradually split, and some of the records referenced by these entries are assigned to new entries in the expansion segment.

However, neither *Spinney* nor *Douceur*, when taken alone or in combination, teach, show, or suggest parsing a data packet into an index portion and a corresponding bucket portion, and then directly indexing the index portion to the bucket portion, as expressly recited in independent claim 1. The Office Action cites to column 18, lines 21-26 of *Douceur* as teaching the indexing recited in Applicant's claims, however, upon careful review of the cited section of *Douceur*, Applicant submits that the Office Action's reliance upon *Douceur* is misplaced. Specifically, Applicant submits that lines 18-26 of column 18 of *Douceur* describes a representation of a list of segments that could avoid scanning through a linked list of segments through use of a pointer table/array with pointers corresponding to the hash table base segments. Each pointer links its

corresponding hash table segment to a previously allocated hash table segment. Once a scan of the bit values of the address determines which segment contains the pointer to the appropriate list, the table/array can be directly indexed by this value to provide a pointer to the appropriate segment.

However, nowhere in *Douceur* or in *Spinney* is there any teaching, suggestion, or motivation to parse a packet into an index portion and a bucket portion, and then to directly index the index portion into the bucket portion (both of the portions being parsed from the same data packet), as expressly recited in Applicant's claim 1. Therefore, Applicant submits that the combination of *Douceur* and *Spinney*, when taken alone or in combination, fails to teach, show, or suggest each and every element recited in Applicant's independent claim 1. As such, reconsideration and withdrawal of the rejection of claim 1, along with each claim depending thereon, is respectfully requested.

With regard to the rejection of independent claims 8 and 15, Applicant submits that each of these claims also recite subject matter that is not taught, shown, or otherwise suggested by the cited combination of references, when the references are taken alone or in combination. More particularly, independent claim 8 recites a data parser that parses said data packet into an index portion and a corresponding bucket portion, and an indexer that directly indexes said index portion to said bucket portion. Similarly, independent claim 15 recites a parser that parses data into an index portion and a corresponding bucket portion and an indexer that directly indexes said index portion to a corresponding bucket portion. As discussed above, *Douceur* and *Spinney*, alone or in combination, fail

to teach, show, or suggest these features. Therefore, reconsideration and withdrawal of the rejection of independent claims 8 and 15, along with each claim depending thereon, is respectfully requested.

Claims 3 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Spinney* in view of *Douceur*, and further in view of *Moreton* (U.S. Patent No. 5,506,624). The Office Action took the position that *Spinney and Douceur* teach each and every element recited in claims 3 and 10, except for the step of indexing the index portion into the bucket portion using an XOR operation. However, the Office Action cites to *Moreton* as teaching this feature, and as such, the Office Action concludes that it would have been obvious for one of ordinary skill in the art to combine the teachings of the references to generate Applicant's claimed invention. Applicant traverses the rejection and respectfully submits that claims 3 and 10 recite subject matter that is neither shown, taught, nor otherwise suggested by the cited combination of references.

As a preliminary matter, Applicant submits that claims 3 and 10 depend from claims 1 and 8, respectively. As explained above, claims 1 and 8 should be allowable; as such, Applicant submits that claims 3 and 10 are also allowable as a result of being dependent upon an allowable base claim.

Spinney and *Douceur* are discussed above. *Moreton* teaches a computer-implemented method of transmitting images from a transmitter to a receiver, where a receiver maintains an image in a local storage and the transmitter receives an updated image for a next temporal period. The transmitter divides the updated image into blocks

and compares a rotating pixel sample of each of the blocks from the updated image with a sampled pixel from a local copy of a receiver's image at a same spatial position of the pixel sample. The transmitter determines a difference between the rotating sampled pixel of each of the blocks from the updated image and the local copy of the receiver's image. The comparison process includes and XOR comparison process.

However, *Moreton* does not teach, show, or suggest parsing a data packet into an index portion and a bucket portion, and then directly indexing the index portion into the bucket portion, as recited in each of claims 3 and 10. As such, Applicant submits that *Moreton* fails to further the teachings of *Spinney* and *Douceur* to the level necessary to properly support a §103 rejection. Therefore, reconsideration and withdrawal of the rejection of claims 3 and 10 is respectfully requested.

In conclusion, Applicant submits that each of claims 1-15 recite subject matter that is not taught, shown, or otherwise suggested by the cited combination of *Spinney*, *Douceur*, and/or *Moreton*, when the references are taken alone or in combination. Specifically, each of Applicant's independent claims recites parsing a packet into two portions (an index and bucket portions), and then directly indexing one portion into another portion of the parsed packet (indexing the index portion into the bucket portion). These limitations are not taught by any of the cited references. Therefore, reconsideration and withdrawal of the rejection of claims 1-15, which are pending in this application, is respectfully requested.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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